

P-02X Specifications

Compatible Disc Types	
Super Audio CD, CD (CD-R/CD-RW compatible)	
Digital Audio Outputs	
ES-LINK Outputs	× 2 (L:1 / R:1)
XLR Outputs	× 2 (Use 2 terminals for Dual AES output)
RCA Output	× 1
Clock Synchronization Input Format	
Jacks	BNC × 2
Clock Synchronization Frequencies	44.1kHz, 88.2kHz, 176.4kHz, 10MHz, 22.5792MHz
Input Impedance	IN 75Ω
	10MHz IN 50Ω
Input Level	IN TTL levels
	10MHz IN Sine wave: 0.5 – 1.0 Vrms
Input Frequency Range	±10 ppm
General	
AC Power Supply	230V, 50Hz; 120V, 60Hz; 220V, 60Hz
Power Consumption	23W
External Dimensions (W × H × D, including protrusions)	445 × 162 × 437mm (17 5/8 × 6 1/2 × 17 1/4")
Weight	31kg (68 3/8 lb)
Included Accessories	Remote control unit (RC-1315) × 1, Batteries (AAA) × 2, HDMI cable × 1, Power cord set × 1, Felt pads × 4, Owner's manual × 1, Warranty card × 1



36-bit Dual Mono D/A Converter D-02X



D-02X Specifications

Analog Audio Outputs		
Terminals	XLR	× 2 (L:1 / R:1)
	RCA	× 2 (L:1 / R:1)
Output Impedance	XLR	140Ω
	RCA	60Ω
Maximum Output Level (1kHz, full-scale, into 10kΩ)	XLR	5.0Vrms
	RCA	2.5Vrms
Frequency Response (192kHz PCM signal input)		5Hz – 65kHz (-3dB)
Signal-to-Noise Ratio (S/N)		121dB (DSD 5.6MHz, 1kHz)
Total Harmonic Distortion		0.0007% (1kHz)
Digital Audio Inputs		
ES-LINK Terminals	× 2 (L:1 / R:1)	
	Input Signal Format	352.8kHz / 384kHz, 48-bit Linear PCM (ES-LINK4 format)
		DSD (ES-LINK4 format)
XLR Terminals	× 2	
	Input Level	5.0Vp-p
	Input Impedance	110Ω
	Dual Connection Input Signal Format	32 – 384kHz, 16 – 24-bit Linear PCM (DUAL AES format)
		32 – 192kHz, 48-bit Linear PCM (ES-LINK3 format)
		DSD (ES-LINK1, ES-LINK2 format)
	Single Connection Input Signal Format	32 – 192kHz, 16 – 24-bit Linear PCM (AES/EBU format)
		DSD (ES-LINK1, ES-LINK2 format)
RCA Terminals	× 2	
	Input Level	0.5Vp-p
	Input Impedance	75Ω
	Input Signal Format	32 – 192kHz, 16 – 24-bit Linear PCM (IEC60958 format)
Optical Digital Terminal	× 1	
	Input Level	-24.0 – -14.5dBm peak
	Input Signal Format	32 – 192kHz, 16 – 24-bit Linear PCM (IEC60958 format)
USB Port (B Connector)	× 1	
	Input Signal Format	44.1 – 384kHz, 16 – 32-bit, Linear PCM 2.8MHz, 5.6MHz, 11.2MHz DSD
Clock Output		
Terminal	BNC × 1	
Output Level	Equal to TTL level (into 75Ω load)	
Output Frequency	44.1, 88.2, 176.4, 48, 96, 192kHz, 22.5792, 24.576MHz Same frequency as input (when output set to thru)	
Output Frequency Precision	±0.5 ppm (when shipped new)	
Clock Inputs		
Terminal	BNC × 2 (WORD IN, 10MHz IN)	
Input Impedance	CLOCK IN	75Ω
	10MHz IN	50Ω
Input Frequency Compatibility	CLOCK IN	44.1, 88.2, 176.4, 48, 96, 192kHz 22.5792, 24.576MHz (±10 ppm)
	10MHz IN	10MHz (±10 ppm)
Input Level	CLOCK IN	Equal to TTL level
	10MHz IN	Sine wave: 0.5 – 1.0 Vrms
General		
AC Power Supply	230V, 50Hz; 120V, 60Hz; 220V, 60Hz	
Power Consumption	24W	
External Dimensions (W × H × D, including protrusions)	445 × 162 × 437mm (17 5/8 × 6 1/2 × 17 1/4")	
Weight	27kg (59 5/8 lb)	
Included Accessories	HDMI cable × 2, Power cord set × 1, Felt pads × 4, Owner's manual × 1, Warranty card × 1	

- These products are made available in three different power supply variations, as shown in the chart above. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.
- The shape of the AC inlet and plug of the supplied power cord depends on the voltage rating and destination country.
- Specifications and appearance are subject to change without notice.
- Weight and dimensions are approximate.

PROUDLY MADE IN TOKYO



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Super Audio CD Transport

36-bit Dual Mono D/A Converter

P-02X
D-02X



New Supremacy Transcending Tradition

Esoteric's digital players carry on an established lineage of high-end audio, compressing world-leading Grandioso technology into a two-chassis configuration that establishes an unshakable identity.

In 1987, the P-1/D-1 demonstrated the superiority of VRDS at the dawn of the CD revolution.

In 2001, the P-70/D-70 proved the concept that higher sound quality can be extracted from more refined CD formats.

In 2005, the P-03/D-03 introduced support for SACD and DSD DAC, giving vibrant life to the most atmospheric nuances of music.

In 2011, the P-02/D-02 generated a fusion of tradition and innovation, winning acclaim and numerous awards for the pair's rich musical expression.

Now, the P-02X/D-02X reestablishes the supremacy of the two-chassis digital player configuration.

Joining together ultimate engineering with the exacting craftsmanship of Esoteric's Tokyo factory, and incorporating the finest Grandioso P1/D1 technology, this new premium product line gives birth to even greater heights of musical expression.

LEADING TECHNOLOGY

In the Footsteps of Esoteric's Most Advanced Grandioso Technology

ES-LINK4

Both the P-02X and D-02X have been newly equipped with Esoteric's state-of-the-art ES-LINK4, which provides high-accuracy digital transmission of both DSD and ultra-wideband 352.8kHz/48-bit PCM by way of its HDMI cable connections. A core feature of the Grandioso P1/D1 digital source system, and developed in line with Esoteric's 'Pure D/A' concept, ES-LINK4 performs the major portion of digital signal processing on the transmission side to significantly reduce the processing load on the D/A converter in pursuit of the ultimate in sound quality.

The Expressive Power of 36-Bit D/A Processing

Like the Grandioso D1, the D-02X utilizes a 36-bit D/A processing algorithm to convert the PCM signal to analog. This 36-bit encoding provides an astounding level of digital resolution that is fully 4,096 times that of 24-bit encoding, and double that of the 35-bit model on which it is based. Taking advantage of the delicate tone realized by this high-bit data minimizes calculation errors for outstanding expression of even the most subtle musical signals.

New Dimensions in Isolated Clock Technology

Widely considered to be the core of any high-end digital player, the clock circuit provides a high-accuracy reference signal for digital circuitry. The clock circuits featured in the P-02X and D-02X are completely isolated from all other circuits, including power source and ground, enabling a pure clock signal to be supplied to the system. The clock's voltage controlled crystal oscillator (VCXO) was specially developed for Esoteric's Grandioso line in a joint effort with Nihon Dempa Kogyo (NDK), one of the world's premier manufacturers of crystal oscillators, for a high-precision custom clock worthy of the world's finest audio equipment. Its extremely low levels of phase noise combine with a large-scale crystal element to ensure exceptional sound reproduction quality.

High-Accuracy Clock Synchronization

A BNC cable connects the D-02X to the P-02X to provide a master clock sync signal for synchronized playback with minimized jitter. Esoteric's proprietary Direct Master Clock LINK* synchronizes the two units while eliminating the need for Phase-Locked Loop (PLL), enabling clear and accurate stereo imaging and crisp sound quality. The system can be further upgraded with the addition of an optional high-accuracy G-01 Rubidium Master Clock Generator, and supports a wide range of frequencies including master clocks (22MHz/10MHz) and word clocks (44.1kHz/88.2kHz/176.4kHz).

*DMCL (Direct Master Clock LINK)

DMCL links the D-02X to the P-02X with a 22.5792MHz reference clock signal that causes the two units to function as a single integrated device. Compared to normal 'sync' systems, which generally require PLL (Phase Lock Loop) processing of the transmitted clock signal, DMCL provides simpler and more direct clocking between multiple devices.



36-bit Dual Mono D/A Converter

D-02X

Super Audio CD Transport

P-02X

Super Audio CD Transport

P-02X

Every component of the new P-02X Super Audio CD Transport has been thoroughly upgraded from its previous generation to realize a premium device featuring the ultimate in mechanical, power supply and circuit designs.

Virtually every component of the new P-02X, save its drive mechanism drive circuit and VS-DD spindle servo, has been thoroughly revised and upgraded from its P-02 base model with the goal of squeezing the Grandioso P1's dual-chassis configuration into a single unit without compromise. Its highly regarded VRDS-NEO transport mechanism employs the same bearing design as the P1, and integrates condensed versions of the P1's digital and clock circuitry.

P1 technology also features in the P-02X's exceptional power supply circuitry, which is equipped with a total of four toroidal transformers providing power to the VS-DD, transport drive circuit, digital output circuitry and clock circuit. Like the P1, these circuits ensure a cleaner and more stable supply of DC power. On the operating side, the introduction of ES-LINK4 provides a wider band of digital transmission, while its advanced clock circuit achieves higher accuracy for higher sound quality.



Highly Refined VRDS-NEO VMK-3.5-20S Transport

Esoteric is justifiably proud of its advanced VRDS-NEO transport, which achieves significant improvements in reading accuracy with its high-precision turntable, optimized for both CDs and Super Audio CDs, and mechanical correction of disc surface irregularities. The P-02X's new VRDS-NEO VMK-3.5-20S transport features a highly refined drive circuit design. The spindle shaft bearing assembly is supported by a pair of specially selected high-precision steel ball bearings, while its duralumin turntable, machined to micron-level accuracy, and 20mm-thick steel turntable bridge weigh a total of 5.2kg (12kg if the chassis' rigid steel base is included).

Inherited from Esoteric's legendary P-0 CD transport, the P-02X's coreless three-phase brushless spindle motor is driven by a high magnetic flux density magnet and utilizes thread feed control for its sliding shaft pickup to maintain the laser beam at a precise right angle to the disc. These features combine with a whisper-quiet tray shutter mechanism* to ensure the ultimate in precision and accuracy.

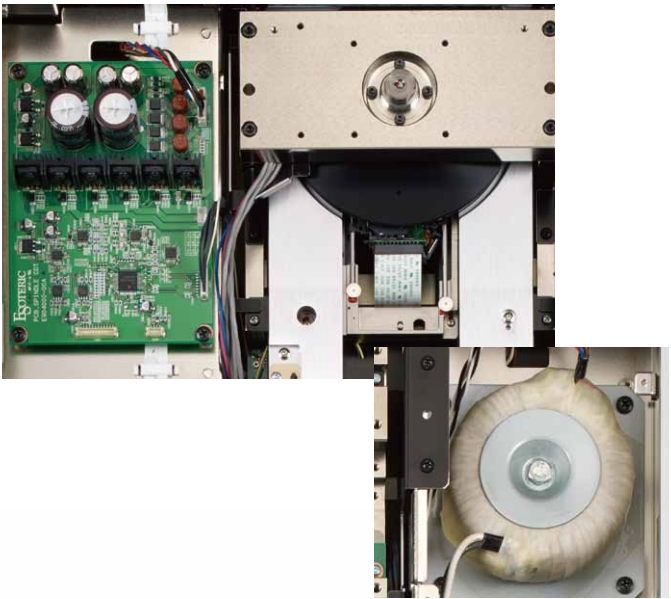
*The shutter automatically closes and locks itself into the front panel when the tray is in its stored position, shielding it from the effects of external sound pressure and vibration, etc., on sound quality.



VS-DD* Spindle Servo Driver

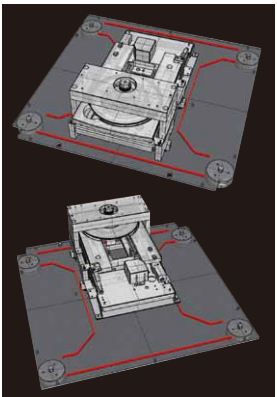
The P-02X's dedicated VS-DD spindle servo driver provides power to the spindle motor that lies at the core of the VRDS-NEO mechanism. Its three-channel discrete amplifier circuit optimizes the waveform of the current supplied to the motor, suppressing vibration, and enabling smooth spindle drive operation and highly precise servo control. Its dedicated toroidal power supply further improves noise isolation.

* VS-DD = VRDS Spindle Discrete Driver



A Massive Investment in Materials, Inside and Out

The interior of the chassis features a double-deck structure and optimized 3D chassis construction that allows all circuit blocks to be connected with the shortest signal path possible. Its exterior case is formed from thick aluminum panels, and its 5mm-thick steel bottom plate is supported at four points on Esoteric's exclusive pinpoint feet. Vibration transmission has also been effectively minimized by the high-precision laser slot processing used in the manufacture of its rigid base.



A Selection of Digital Outputs

The P-02X's digital outputs are conveyed through three types of connectors (2 ES-LINK, 2 XLR & 1 coaxial), including new dedicated ES-LINK4 HDMI ports and dual XLR connectors that maintain compatibility with earlier versions of ES-LINK.

Organic EL Displays

Both units feature smooth-operating, low-consumption electroluminescent (EL) displays that are eminently suited to such state-of-the-art components.

High-Quality Remote Control With a Luxurious Feel

The P-02X's RC1315 Remote Controller is constructed from a thick panel of solid aluminum. The brushed finish on its control panel matches that of the unit's front panel and offers a luxurious feel of the highest quality.



Top view



Bottom view

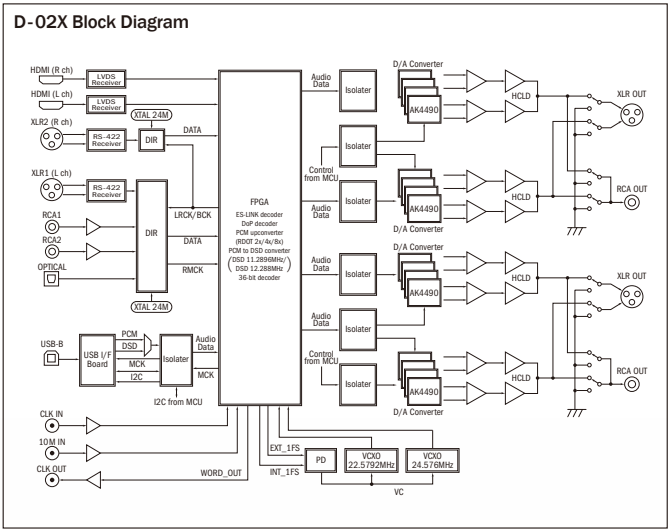
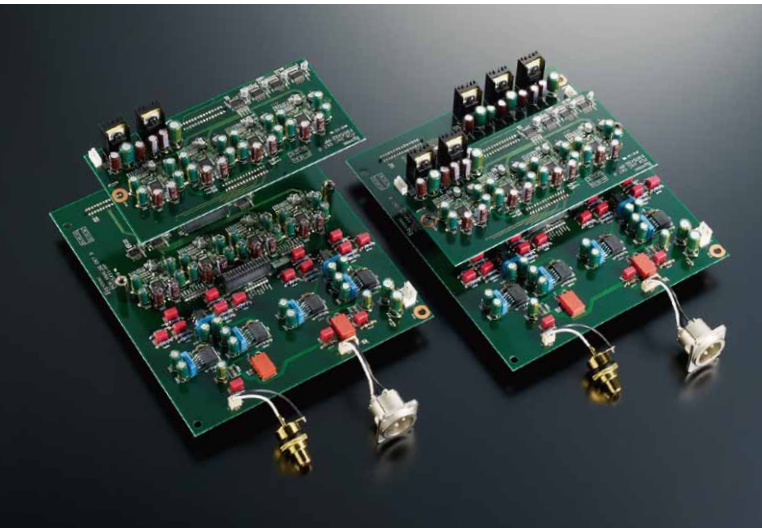
36-bit Dual Mono D/A Converter

D-02X

A total redesign of every component at its heart transforms the D/A converter in a spectacular renovation. New impressions await in compelling musical playback capability that crosses all boundaries.

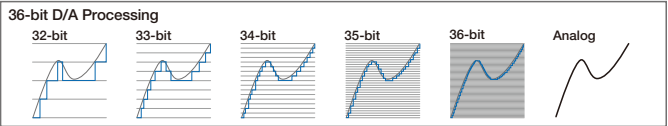
Featuring a total redesign of all its circuit components, the new D-02X compresses the monoblock design concept of Esoteric's premier Grandioso D1 into a single-unit dual mono D/A converter without compromise. Retaining the D-02's original configuration of four independent toroidal power supply circuits (for the digital circuitry, clock circuit, and left and right channel analog circuits), all components and patterns in each circuit have been significantly upgraded.

Notably, the D/A circuitry that lies at the heart of this advanced unit now boasts 16 differential circuits per channel (32 outputs), double that of its earlier configuration, while maintaining the same grand sense of scale as the D1. Other features include new ES-LINK4 signal inputs, 36-bit D/A processing and the same Esoteric HCLD line buffer technology that has won accolades for the Grandioso C1 preamplifier. Extensive efforts have also been made to provide support for high-resolution playback, including the 11.2MHz DSD file format, for ever more penetrating musical playback capability.



36-Bit Resolution Accentuates the Most Delicate Sound Textures

The D-02X uses 32 (16 + 16) DAC circuits to achieve its low-noise and phenomenal linearity. Its AK4490 chipsets are produced by Asahi Kasei Microdevices. In addition to directly processing DSD signals, a new 36-bit D/A processing algorithm performs analog conversion of the PCM signal at 36-bit resolution for smooth, delicately detailed high-resolution sound quality.



ESOTERIC-HCLD*: Esoteric's Exclusive Output Buffer Delivers Powerful Direct Current Transmission

High-speed current transmission capacity is the most important factor in an analog output circuit's ability to transmit the wide dynamic range of a musical signal without loss. Extensive resources invested in the D-02X's output buffer amplifier circuitry greatly extend the limits of its performance as a line driver. Featuring high current output capacity, its high-performance elements boast an exceptionally high slew rate of 2,000V/μs as an indicator of its remarkable response speed. The D-02X's top-tier buffer circuit configuration features four RCA output circuits and two circuits each for the XLR outputs' hot and cold terminals. By maximizing its capacity to deliver instantaneous current output, the D-02X reproduces the full dynamics of music with breathtaking realism. * HCLD=High Current Line Driver

Wide-Range D/D Conversion Compatible With Many Sources

In addition to playback at a source's original sampling frequency, the D-02X also features PCM up-conversion capability (2x, 4x, 8x) and

PCM-to-DSD conversion that uses a proprietary algorithm to convert the PCM signal to fixed 11.2MHz DSD, enabling significantly smoother musical reproduction.

Digital Inputs Support High Sampling Rates

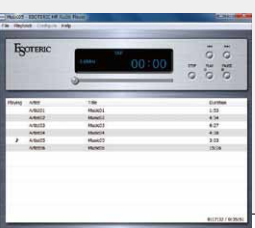
The D-02X's coaxial and optical inputs support PCM signals up to 24-bit/192kHz and 2.8MHz DSD (DoP). Two XLR inputs support 48-bit/192kHz (ES-LINK3), 24-bit/384kHz (Dual AES 8Fs) and 5.6MHz DSD (DoP & Dual XLR mode).

USB Input Compatible with PCM, DSD, and Asynchronous Transmission

The D-02X also features a USB input that supports asynchronous transmission, PCM rates up to 32-bit/384kHz, and 2.8/5.6/11.2MHz native DSD. Utilizing Esoteric's proprietary PC driver software in combination with its free HR Audio Player, the D-02X provides high-resolution playback of even studio master-quality source files.

ESOTERIC HR Audio Player

Windows/Mac application for 11.2MHz DSD and 384kHz PCM audio file playback. Available for download, free of charge.



Supported file formats

DSF	DSD 2.8 / 5.6 / 11.2MHz		
DSDIFF	DSD 2.8 / 5.6 / 11.2MHz	ALAC	44.1k - 384kHz, 16 - 32-bit
PCM(wav)	44.1k - 384kHz, 16 - 32-bit	AIFF	44.1k - 384kHz, 16 - 32-bit
FLAC	44.1k - 384kHz, 16 - 32-bit	MP3	32k - 320kbps

Changeable XLR Output Pin Assignment

As phase can be digitally inverted in a contactless system, either Hot 2 or Hot 3 can be selected with no deterioration in sound quality.



Top view



Bottom view